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ABSTRACT

Phase 1 of a two-phase study on employment demand in Agriculture/Agribusiness for New York State focused on data collection. Four objectives were to (1) compile a preliminary listing of current occupations by industry emphasizing grade levels, (2) review cross-coding systems for employment demand data, (3) develop a preliminary system for periodic update of employment demand data, and (4) collect data on current and projected labor demand. An advisory committee and intermediary-level task force were established. Two data bases were projected--one listing job titles with appropriate coding and another requiring specifications of data elements and their values to be used on data collection. Data were collected through use of existing data, mailed surveys, personal interviews, and projections from businesses with staffing common patterns. (One-half of the report is comprised of a bibliography and appendixes, including Dictionary of Occupational Titles designations checked for relevant job titles, Standard Industrial Classification codes and business areas defined as agriculture/agribusiness in New York, list of job titles used on survey instruments, and sample survey instrument.) (YLB)

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A STUDY OF EMPLOYMENT DEMAND FOR AGRICULTURE AND AGRIBUSINESS IN NEW YORK STATE

PHASE I FINAL REPORT

April 1981

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PREFACE

As key decision makers in New York State occupational education, state, regional and local occupational education planners and administrators need timely information on employment demand in order to produce an effective labor supply. When Phase II of this project is completed, project staff will be able to provide a detailed analysis of the current labor market in New York State agriculture and agribusiness. They will also be able to provide an employment demand updating system that can serve as a model for other fields in occupational education as well. The employment demand data that will be provided by this study should do much to help meet the information needs of program planners as they upgrade local occupational education programs.

This report, covering Phase I of this study, addresses the issues that have emerged as staff located, obtained, validated and managed a large and complex data base in preparation for its analysis and use as part of an employment demand updating system. The procedures for creating such a system should prove extremely helpful to researchers looking for methods for acquiring and formatting employment demand data.

This project represents the cooperative effort of the State Education Department, the Department of Labor, the Department of Commerce, the College of Agriculture and Life Sciences, and the Cornell Institute for Occupational Education to meet an important need of New York agriculture and agribusiness.

James A. Dunn, Director
Cornell Institute for
Occupational Education

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This final report summarizes Phase I of the study of employment demand data for Agriculture/Agribusiness in New York State.

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Appreciation is extended to the project Advisory Committee and Task Force members who provided direction to the project and facilitated its many tasks. In particular, expertise shared by Louis Schisa, Chief of the Bureau of Labor Market Information, DOL, contributed greatly to the success of this study.

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1.0 INTRODUCTION

This report covers the first of a two phase study on employment demand in Agriculture/Agribusiness for New York State. The final task for Phase I was the collection of data. Therefore, this report necessarily focuses on the study's procedures rather than on its products. The study's outcomes will be addressed in the Phase II final report.

1.1 The Study

The study will provide employment demand information that can be used by educational planners at various levels. The data will assist in planning appropriate educational programs to satisfy real employment needs in the Agriculture/Agribusiness job market. Phase I covers activities from the basic organization and preparation of the study through the collection of data. Phase II activities will include the processing and analysis of collected data through developing and disseminating user guides.

1.2 Problem Statement

Comprehensive and accurate employment demand data are needed for occupations in Agriculture/Agribusiness if occupational education is to be relevant to job opportunities. In the past, employment demand information has only been available on a partial basis from various government sources such as the Department of Labor's Occupational Employment Survey, The Commerce Department's Bureau of the Census, and the Department of Agriculture and Markets.

The data are usually classified by industrial categories rather than job clusters. However, occupational agricultural education programs are developed around job clusters rather than industries. Agriculture/Agribusiness is not a separately identified industry but a component of many industries. Current data omit information on some major agricultural fields, as well as combining jobs requiring agricultural competencies in broad categories of non-agricultural occupations. A significant portion of Agriculture/Agribusiness jobs are held by self-employed persons in family businesses. These people, who also require education and training, are not usually included in employment data.

State, regional and local program planners and administrators need comprehensive data for optimal resource allocation, curriculum development and job placement. Baseline data are needed to provide a coherent relationship between labor market information and educational activities such as career orientation, student counseling, and the recruitment and training of workers. Comprehensive and accurate data are particularly important for developing training and placement programs for unemployed youth and adults.

Agricultural education personnel have available to them 206 instructional modules which were developed through the Bureau of Agricultural Education in the State Education Department. In addition, a national study has recently been completed identifying and validating essential agricultural competencies needed for entry and advancement in major agriculture and agribusiness occupations. Efficient use of these materials calls for complete information on employment opportunities.

1.3 Purpose

A uniform system for collecting and projecting employment data in Agriculture/Agribusiness has not yet been developed. The completion of this project will improve the availability of information on current and projected employment demand. Data from the project can be integrated into a statewide, comprehensive supply and demand system.

Toward this end, Phase I outcomes of this project were:

1. A compilation of a preliminary listing of current Agriculture/-Agribusiness occupations by industry. Emphasis was on occupations requiring occupational preparation at the secondary, postsecondary and adult levels.
2. A review of cross-coding systems for employment data.
3. Development of a preliminary system for periodic up-dating of employment demand data in Agriculture/Agribusiness.
4. Collection of data on the current and projected labor market demand for qualified workers in existing and emerging occupations related to Agriculture/Agribusiness.

Phase II of the project will address itself to a) an extension of data collection, b) analysis and interpretation of the data, c) the application of appropriate cross-coding systems to the project data, d) the development of procedures and materials to assist identified target audiences to use the employment demand data, and e) the dissemination of the project's findings to user groups.

Collection and categorization of accurate and comprehensive employment demand data provides the basis for programs of occupational education in agriculture that prepare students for available jobs. Thus, instruction is improved through teaching competencies needed in the world of work. The student's motivation to learn increases as he or she sees the need for the instruction, and views graduates of the program placed in jobs. As workers become available who are competent to fill positions, employer support and involvement with occupational education programs will increase. This adds to the resources available for programs, creating a subsequent improvement in instruction.

1.4 Need for the Study

New York State possesses a diverse and viable agricultural sector, which is the largest contributor to the state's economy in terms of dollar value of products and services. In 1977, the Department of Agriculture and Markets estimated that cash receipts alone for the sale of all farm commodities in the state totaled \$1.7 billion.

The viability of this economic sector, as with other businesses and industries, depends on an adequate supply of competent workers. This, in turn, requires programs of occupational education in agriculture.

The agricultural education system includes career orientation at the junior high school level, exploration in agricultural careers in grades 9-10, specific occupational preparation in grades 11-12; technical agricultural training in two-year colleges; bachelor of science level professional preparation at the four-year college level; and upgrading or retraining for adults. Realistic occupational and technical instructional programs are needed in the program areas of agricultural production; agricultural supplies and services; agricultural mechanics; agriculture products, processing and marketing; horticulture; renewable natural resources; and forestry. Accurate and comprehensive Agriculture/Agribusiness employment demand data is needed as a basis for planning these needed programs. Well-informed planning is needed at the local, regional and state levels for optimal allocation of resources to provide occupational education programs that reflect current and projected job opportunities in Agriculture/Agribusiness.

State Education Department and State Department of Labor personnel carried out preliminary developmental efforts which indicated that:

1. Limited data can be secured from existing sources. Missing information will have to be collected from Agriculture/-Agribusiness firms to supplement such data.
2. A procedure for identifying and projecting Agriculture/Agribusiness employment data can be developed in conjunction with statewide data systems.
3. Periodic updating of data can be included in routine data gathering, once the procedures are developed and tested.

1.5 Review of Literature

Points 1-3 (above) were supported by a review of existing data and related research efforts. The related literature reviewed included:

- o Employment in Agriculture and Agribusiness Occupations. Economic Research Service, U.S. Department of Agriculture, August 1974.

- o Matching Occupational Classifications to Vocational Education Program Goals. U.S. Department of Labor, Bureau of Labor Statistics. Washington, 1975.
- o Workers in Agribusiness. New York State College of Agriculture, Cornell University, Agricultural Experiment Station, Ithaca, NY. Lee Taylor and J. Paul Leagans. Bulletin 1029, March 1970.
- o Occupational Employment Survey Reports. New York State Department of Labor, Division of Research and Statistics.
- o Entry Occupations in Off-Farm Agriculture. W.E. Drake, F.K.T. Tom, College of Agriculture and Life Sciences, Cornell University, July 1968.
- o Validation of an Instrument to Measure Occupational Image in Agricultural Business and Industry. A.L. Berkey, College of Agriculture and Life Sciences, Cornell University. June 1973.
- o National Ag Occupations Competency Study -- Identifying and Validating Essential Competencies Needed for Entry and Advancement in Major Agriculture and Agribusiness Occupations. U.S. Department of Health, Education and Welfare, Office of Education, Occupational and Adult Education Branch. May 1978.
- o Using Task Data for Recruitment of Workers in Ornamental Horticulture: Report of a Field Test. A.L. Berkey, W.E. Drake. College of Agriculture and Life Sciences, Cornell University. June 1972.
- o Analysis of Tasks Performed in the Ornamental Horticulture Industry. A.L. Berkey, W.E. Drake. College of Agriculture and Life Sciences, Cornell University, June 1972.
- o A Model for Task Analysis in Agribusiness. A.L. Berkey, W.E. Drake, J. Legacy. College of Agriculture and Life Sciences, Cornell University, 1972.
- o 1974 Census of Agriculture. U.S. Department of Commerce, Bureau of Census.

Additionally, similar studies in agriculture conducted in other states were reviewed and are listed in the bibliography.

The information on New York State, found in the review of the literature, supported the need to collect accurate and comprehensive employment demand data in Agriculture/Agribusiness for the state. Existing research studies and data provided the foundation for this project.

The literature review, as well as information from the New York State Occupational Information Coordinating Committee (SOICC), indicated that this study would not duplicate other past or on-going research activities. This type of study was established as a priority by NOICC for funding at the national level.

The high priority of need for this research was indicated by the strong endorsement and support of the College of Agriculture and Life Sciences at Cornell University. In addition, the project was rated as a top priority by the Association of Teachers of Agriculture in New York (ATANY) and the Joint Staff in Agricultural Education.

1.6 Limitations of the Study

Two limitations planned in the proposal restricted the study to jobs within New York State and to job titles requiring Agriculture/Agribusiness competencies.

The study was also limited by several other factors. First, there was the lack of an accurate and comprehensive listing of the names and addresses of individual businesses in the business areas identified in the study. In some cases, business areas were deleted for this reason.

The second factor was the broad scope of business areas defined as Agriculture/Agribusiness in relation to project budgeting. In order to meet budget constraints, the business areas identified for supply and processing and distribution functions were limited primarily to those that articulated directly with agricultural production (first stage). A related concern was the need to allocate resources to develop the computerized data management system, which was an unanticipated major resource expenditure.

A third factor that emerged from survey responses, was the difference among survey respondents in interpreting Agriculture/Agribusiness. Veterinarians, for example, perceived themselves as part of the medical profession rather than in Agriculture/Agribusiness. Thus, data on the need for agricultural training programs for job entry will need to be interpreted carefully.

A fourth constraint will be limited data projections, since the Occupational Employment Statistics (OES) matrix has not yet been developed for Agriculture/Agribusiness. Projections will be made based on a modified OES census matrix, and will not include all job titles in the study.

Finally, use of the data may be limited for program planning since some of the job titles in Agriculture/Agribusiness are not in the Dictionary of Occupational Titles (DOT). Such titles do not yet have job analyses associated with them.

2.0 OBJECTIVES OF THE STUDY

The study is organized around four objectives for Phase I. These consist of the following:

2.1 Objective I: Compile Preliminary Listing of Current Occupations by Industry Emphasizing Grade Levels

In order to implement this objective the following tasks were defined (which are described in detail in Section 4 of this report):

- 1) Establish advisory committee for the project.
- 2) Determine the type and format of the data needed for the study.
- 3) Develop a preliminary list of occupations and cross-classify.
- 4) Identify different types of Agriculture/Agribusiness firms in New York State and classify by Standard Industrial Classification and by job titles.
- 5) Develop a list of names and addresses of relevant establishments.
- 6) Identify current and projected job titles.

2.2 Objective II: Review Cross-Coding Systems for Employment Demand Data

- 7) Cross-code information by DOT, OES, SIC and any other relevant coding system.

2.3 Objective III: Develop a Preliminary System for Periodic Update of Employment Demand Data

- 8) Establish a procedure for projecting employment demand.
- 9) Develop an update system.

2.4 Objective IV: Collect Data on Current and Projected Labor Demand

- 10) Gain employer cooperation and endorsement.
- 11) Determine sampling and data collection procedures.

- 12) Develop instrumentation and procedures for use and analysis.
- 13) Pretest instruments.
- 14) Conduct training for data collection staff.
- 15) Collect data.

3.0 PROCEDURES

Each of the objectives listed in Section 2.0 had major tasks listed underneath. This section describes in more detail the range of activities that were undertaken to accomplish each task.

3.1 Advisory Committee

In the development of the general design of the study it was determined that the first task was to establish an advisory committee to represent constituencies in business, education, and New York State government agencies. This representative committee was to serve as a source of information and advice for determining policy, legitimizing the project, securing data, and disseminating the research results in subsequent tasks of the study.

Project personnel worked with the advisory committee as a formal group, and with individual members according to their agency representation and the task at hand. The members of the advisory committee are listed in Appendix A. They represent the following organizations, institutions and agency functions within New York State:

- o BOCES Regional Planners
- o Agricultural Teachers Association of New York (ATANY-A.C.E.)
- o Empire State Council of Agricultural Organizations, Inc.
- o Director of Planning, New York City Board of Education
- o Director of Career Planning and Placement, College of Agriculture and Life Sciences at Cornell University
- o Agricultural and Technical Colleges
- o Division of Occupational Education Planning, Information, Research and Evaluation, New York State Education Department (SED)
- o Bureau of Labor Marketing Information, New York State Department of Labor

- o New York State Advisory Council on Vocational Education
- o Cooperative Extension
- o Director of Human Resource Development, Agway, Inc.
- o Agriculture Teachers

3.1.1 Task Force. It soon became apparent that often there was either too much distance between advisory committee members and the field, or that a committee member represented too broad an area to go directly to the field for data collection. An intermediary level was needed between advisory committee members and the field, in order to make realistic demands on the time of the advisory committee members. As a result, the idea evolved of a task force to work directly at the field level. An example was the naming of a representative from each Agricultural and Technical College to provide backup to the Agricultural and Technical College president on the advisory committee.

Task force members (see Appendix B) functioned on an individual basis with the project according to their occupation, position, or agency representation. More than 80 persons were identified from trade organizations, institutions, and associations. Members provided information and assistance in identifying existing data, identifying and classifying those occupations appropriate to New York State, identifying and locating Agriculture/Agribusiness establishments, and enlisting cooperation from Agriculture/Agribusiness establishments.

3.2 Type and Format of Data

This section describes the type and format of data needed to meet the objectives of the study. In accomplishing this task, input was provided by the Advisory Committee, and the SEN program liaison officer.

As determination of the type and format of data progressed, it became apparent that two separate data bases were needed. The first was a list of job titles with appropriate coding, from which instruments for respondents in the respective business areas could be developed. The second data base would require the specifications of data elements and their values to be used in data collection. The information thus collected from existing data sources (e.g., U.S. Census of Agriculture), as well as from respondents would then become the project's base data (and second data base).

3.2.1 Data base for instrumentation/reporting. The development of the data base for instrumentation proceeded concurrently with identification of agricultural job titles and the assignment of codes to titles. The magnitude of the task required the development of a computerized system for data management. A search for existing programs revealed that no appropriate system, providing the necessary options, currently existed. The needed system was, therefore, developed in consultation with staff in the Office of Computer Services at Cornell

University. The considerable effort required for this task leads the researchers to conclude that the system developed represents an important addition to the tools applicable to research on employment demand data.

The data base for instrumentation reporting includes Agriculture/-Agribusiness job titles coded by a) the Dictionary of Occupational Titles (DOT) nine-digit occupational code; b) the status of the job title as base, alternate or dummy (project assigned); c) occurrence or absence of the title in New York State; d) a DOT three-digit industry code; e) four-digit Standard Industrial Classification (SIC) code(s); and f) business areas within SIC code(s) that apply to a given job title. Data elements representing educational planning regions and Office of Education education program codes are also included for data reporting purposes.

This data base was then used to develop the instruments applicable to respondents in the respective business areas of Agriculture/Agribusiness.

3.2.2 Data to be collected. The data elements to be collected from respondents and existing data sources are by job titles defined as Agriculture/Agribusiness in the study (see Appendix F). Three types of job titles were used: DOT base, DOT alternate and 'dummy' (project assigned) titles. Dummy titles represent new or alternate specialized titles not in the DOT. All three types of titles were used to collect data in order to approximate actual usage by employers.

3.2.3 Positions. Data on total numbers of current year and projected (two year) positions were collected by job title. Positions were classified as full-time or part-time by the respondent. Positions were further subdivided under each classification as year-round or seasonal. 'Year round' is defined as employment of more than 150 days in one year. 'Seasonal' refers to a position for which people are hired for 150 days or less during the same time period(s) each year. Total number of positions includes both filled and unfilled positions. Also, for seasonal positions, 'total' was defined as the total number of different positions in all seasons.

3.2.4 Openings. Data on total openings for the current year were collected by job title. The same classifications of 'full-time' and 'part-time,' 'year-round' and 'seasonal' were used. Data on projected number of openings were not collected from respondents on the advice of advisory committee members from the New York State Department of Labor.

3.2.5 Unpaid family labor. Data on the amount of unpaid family labor were also collected by job title. The definition of unpaid family labor were determined by the respondent.

3.2.6 Need for an agricultural training program. Respondents were asked if an agricultural training program was needed for each job title. This was defined as at least a ten month program needed prior to employment. The term 'training program' was used rather than 'educational program' as a result of field-testing the survey instrument.

3.2.7 Data to be projected. Data projections will be made in cooperation with the New York State Department of Labor using the Occupational Employment Statistics (OES) census matrix with some modifications. Projections on openings will be made for those job titles included in the matrix.

The data for the study will be reported by job title. Each job title will be coded by a) the applicable occupational and industrial codes, b) educational planning regions, and c) Office of Education (OE) program codes. The project's computer program will generate the desired data arrays.

3.3 Develop a Preliminary List of Occupations and Cross-Classify

Over 2700 job titles were identified, some 2200 of which were potentially usable in New York State. These job titles were derived primarily from the fourth edition of the Dictionary of Occupational Titles (DOT), an update of the DOT supplied by the Department of Labor, census code job title listings, USOE program classification manuals, and over 60 state studies on agricultural employment demand (see Bibliography).

3.3.1 Identification of job title sources. The first step in this task consisted of locating the information sources from which agricultural job titles could be identified. After examining the available sources (see Bibliography), it was found that the most comprehensive listing was the latest edition of the DCT. Therefore, the DOT was selected as the primary source for locating and listing job titles. Further, it was decided that an important feature of the list would be the ability to uniquely identify each job title. For this reason a coding system was developed which used the nine-digit DOT job title code as a unique identifier.

This basic list was then augmented by additional titles from other sources. The DOT nine-digit code was then the basis for deriving a "dummy" code when the additional title was not found in the DOT.

3.3.2 Job title search procedures. An alphabetical list was developed of all DOT industry designations which included any agricultural or agriculturally related job titles (see Appendix C). For each of these industries, the entire job title listing was reviewed and evaluated, and job titles were identified which could be classified as agricultural or agriculturally related according to the project's definition of agriculture.

For each job title identified, a three-by-five index card was prepared and contained the following information:

- o DOT nine-digit number (one per card)
- o Base (main) title (only one per card and underlined)
- o Alternate job title(s)

- o DOT industry designation (by title only, first. Later, the three-digit code was assigned)

Procedurally, the names of the industry designations were first identified in the DOT. The names were then looked up in the SOC manual listing of DOT industry codes and matched with their three-digit identifiers. (The DOT does not contain the three-digit industrial codes.)

3.3.3 Procedures to avoid duplication. A master copy of the fourth edition of the DOT was maintained in which each job title entered in the index file was checked off in the "Occupational Titles Arranged by Industry Designation" section, (pp. 1157-1361).

As new titles were found, they were compared against the index list as well as the DOT section for duplication. Those that were not duplicates were then checked against alternate titles, and a decision was made concerning how similar the new title was to a title in the system. If it was considered to be a slight variant of an existing title, the new title was considered a duplicate. If it was considered to be unique, it was entered into the index file.

For job titles that were unfamiliar or questionable with regard to agricultural competencies required for successful job performance, a judgment was made after consulting a) the concise and detailed definitions developed for Agriculture/Agribusiness, and b) the description of job duties and activities for given job titles found in the 'Occupational Group Arrangement' section of the DOT.

To determine the base title and the alternate titles associated with a given DOT nine-digit number, the "Occupational Group Arrangement" section was used extensively, as well as the DOT system of using all capitalized letters for base titles and lower case for alternate titles. Since there were inaccuracies in the "Industry Designation" index of the DOT, it was necessary and also more efficient to cross-check the index with the "Occupational Group Arrangement" section.

All DOT numbers in the initial DOT listing were checked and verified for accuracy.

3.3.4 Preparation for computer entry. All job titles with assigned nine-digit DOT numbers or nine-digit DOT "dummy" numbers had the following coding added to the listing:

- a) three-digit DOT industry code
- b) all applicable five digit SIC codes. The first four digits are the SIC code and the fifth digit represents business areas within the SIC classification (see Appendix D).

3.3.5 Alternative DOT job title sources. Letters were sent to every state education agency's agricultural education consultant or bureau chief, and to agricultural teacher educators asking for state studies on employment demand in agriculture. Over sixty documents were received (see Bibliography). Each document was searched for job titles and these were compared to the titles already in the index file. If no DOT nine-digit number could be found for the title, staff developed a "dummy" DOT number for the job title, as part of a later step. A "dummy" number was developed by deciding which first three DOT numbers best characterized the job title. The first three digits of the DOT number represents a type of activity. The next three digits assigned were 999 (reflecting "dummy" status), and the last three digits reflected the serial position of the job title.

3.4 Identify the Different Types of Agriculture/Agribusiness Establishments in New York State and Classify by Job Titles and SIC Codes

In order to locate the names and addresses of firms to be considered for the survey, the following steps were required:

3.4.1 DOT industrial codes aggregated. All the DOT three-digit industrial codes assigned to all the job titles in the file were compiled. The compilation was put in numerical order to be used with a DOT to SIC conversion table. The list was reviewed by staff and other experts for completeness against the complete list of industrial titles in the DOT, and the compiled list was expanded to include additions.

3.4.2 Assignment of SIC codes. In order to develop the list of SIC codes that were to be used in the system, project staff had to go from the DOT three-digit industrial codes to a SIC conversion table, since there is no existing conversion table which correlates nine-digit DOT job title codes with SIC codes. A further complication is that the DOT industrial coding system is more general than the SIC coding system, so that one DOT code may include ten to twenty SIC codes. The DOT number assigned to a given job title was looked up in the DOT to SIC conversion table, and each of the SIC codes (as many as twenty) was considered for its appropriateness to the given job title. Given that staff evaluated almost 3000 job titles, this task was labor-intensive, and required some 300 work hours to finish. Most job titles had more than one SIC code assigned to them.

After the SIC codes were identified initially, the codes were reviewed by different staff members, the principal investigators and other experts, and revised as needed. The codes were then entered into the computer file of job titles, a printout of which was edited and proofed, errors corrected, and a final editing and proofing completed.

3.4.3 Assignment of business areas. After the total list of SICs had been entered into the computer file, project staff further evaluated the list and then assigned business areas within SICs (see Appendix D.) A decision was made at this time whether a given SIC was to be considered an appropriate means of accessing the names of firms through the Unemployment Insurance (U/I) tapes. If the evaluation indicated that the SIC did not

contain firms outside the purview of the study, that SIC was included in the final list submitted to the Department of Commerce to access firms through the U/I tapes.

After business areas were determined for a given SIC, a fifth digit was assigned with values of 1 to 9, each of which represents a different business area (up to nine possibilities).

3.4.4 Development of various lists of job titles. The computer generated a number of lists for the project. One list consisted of job titles by SIC codes, so that the range of job titles assigned to an SIC could be evaluated for completeness. A second was an alphabetical listing of job titles, used for eliminating duplicates and for coding returned surveys that contain additional titles.

After the SIC list of job titles was printed out, a major task was to determine which job titles occurred in New York State. A tenth digit was added to the DOT number to code for the following status values:

- o occurs in New York State
- o occurs in New York State but outside the scope of the study (e.g., banker, lawyer, virologist, etc.)
- o is an Agriculture/Agribusiness title but does not occur in New York State (e.g., cotton ginner, horse wrangler, tobacco sorter, etc.)
- o is a title we consider does not belong to Agriculture/Agribusiness
- o is a title which is an alternate for a title already in the system.

The criteria applied to determine assignment of these status values included:

- o Existence of the business area in New York State for Supplying, Processing and Distribution to Production Agriculture.
- o A minimum dollar value of \$100,000 of a crop in New York State for agricultural production titles associated with that crop.
- o Relationship of the title to Agriculture/Agribusiness as per the definitions established for the study.
- o Congruence with existing job titles. For similar titles, preference was given to titles included in the DOT.

This process was a very labor intensive effort since it involved checking the job analysis descriptions of individual titles in the DOT. It was found that only in this way could accurate assignment be made since the meaning of many titles was not implicit in the title per se.

3.5 Develop List of Names and Addresses of Agricultural Establishments

A three-step procedure was defined for acquiring the names and addresses of agricultural establishments. The first step was to identify sources of data that would be accessible to project staff. To be cost-effective, existing data sources were used for acquiring data and for developing the follow-up system. The data sources included: (a) the Unemployment Insurance tapes, (b) trade organizations and associations, (c) state data from the 1978 Census of Agriculture for year-round employment in production agriculture, (d) the 1978 N.Y.S. Governor's Report for seasonal employment in production agriculture, and (e) applicable economic censuses containing first stage data on firms in Supply and Processing/Distribution. These sources were used when firms could not be identified from the Unemployment Insurance tapes or other sources.

The second step in the procedure was to determine the population sizes from which to draw samples by acquiring, (a) from the Department of Labor's Bureau of Marketing Information, arrays of number of firms for each identified SIC code, stratified by employee size of business and by educational planning region; and (b) the membership lists of relevant professional and trade organizations.

The third step consisted of defining the sampling procedure for each of the data sources. Strata were defined for sampling as well as the number of firms to be sampled. However, it became clear that the use of strata would not be helpful, and total SIC populations were used in the survey (see Section 3.11.2 on Sampling).

3.6 Identify Current and Projected Job Titles

A data base was developed which is a comprehensive listing of Agriculture/Agribusiness job titles culled from the DOT and other state studies. Additionally, all the titles are coded by SIC, and by DOT job title and industrial codes. The subset of titles identified as applicable to New York State formed the data base from which job titles for survey forms were drawn.

The identification of current and projected job titles actually used in New York State will result from an analysis of respondent returns. This activity will take place in Phase II of the study.

3.7 Cross-Coding Data by Occupational, Industrial and Program Codes

The task of cross-coding data by occupational, industrial and program codes was done concurrently with decision-making on the type and format of data to be used for the study.

3.7.1 Program codes and Occupational Planning Regions. The project proposal specified that employment demand data be reported by job titles under Office of Education (OE) program codes, by occupational planning regions, and by state totals. Therefore, these two classification systems are built into the data base.

3.7.2 Occupational codes. The nine-digit Dictionary of Occupational Titles (DOT) code was the basic system used to uniquely identify titles. Codes were taken from the DOT fourth edition manual. For titles (new or alternative) not in the DOT, dummy DOT numbers were assigned (see 3.3.5).

The DOT codes were manually assigned and later entered in the computer data base.

The three-digit U.S. Department of Commerce, Bureau of the Census, occupational code is a general coding system incorporating multiple job titles under one code. Additionally, census job titles differ from DOT job titles. Thus, the census codes are of limited value for project data bases derived from DOT job titles. However, census occupational codes will be of use for projecting employment demand, using the U.S. Bureau of Labor Statistics' Occupational Employment Statistics (OES) census matrix. The census codes are derived from computerized "cross-walk" tapes.

The third occupational classification code reviewed was the U.S. Department of Commerce Standard Occupational Classification (SOC) System. This four-digit code includes multiple census and DOT job titles under a single SOC code. Like census occupational codes, SOC codes are of limited value for the project. Additionally, New York State Department of Labor staff advise that SOC coding is still under development and thus is premature as a coding system for use in this research.

3.7.3 Industrial codes. The U.S. Department of Labor's four-digit Standard Industrial Classification (SIC) coding system was used for the study. The job titles identified for the study were assigned applicable SIC code(s). A DOT to SIC conversion table was used as the first step in determining the SIC assignment. In this way, the population of SIC codes applicable to Agriculture/Agribusiness job titles was identified. In cases where more than one business area was included in an SIC code, a fifth digit was added to designate the business area(s) in which job titles occurred. A computer sort by five-digit SIC codes resulted in an aggregation of job titles by individual business areas. This, in turn, provided the basis for the title listings on instruments used for respondents in the respective business areas.

The three-digit DOT industrial codes were used as a second industrial classification system. As described in 3.4.2, the DOT code was used to assign SIC codes to job titles. This procedure helped to define the subset of applicable SIC codes.

It was found that the large number of job titles and applicable codes required a computer information system to be manageable. The assignment of codes to individual job titles, and the manual input and editing of this data into the computer, required a significant amount of staff time and became a major project task. This may explain why no such file was found to exist in the review of literature. This file, as a separate product, represents a new resource for determining employment demand in Agriculture/Agribusiness.

3.8 Establish Procedure for Projecting Employment Demand

The projected number of openings for 1982 will be developed by the Department of Labor using census code job titles.

The survey form solicited information from employers on the number of positions available in 1980, and the anticipated number of positions available in 1982. Information was also requested on the total number of openings for 1980. When these data are analyzed in Phase II of the project, the procedure will be evaluated.

3.9 The Update System

The update system as designed by project staff consists of four major components, for each of which specific tasks have been specified for implementation and documentation in Phase II of the project. The components are:

3.9.1 The definition of the characteristics of an update system. System characteristics were identified for the following sub-components:

- | | |
|--|---|
| <p>IS THE
DATA &
HOW DOES
ONE
ACQUIRE
IT?</p> | <p>a) Data input mechanisms. This consists of ing their accessibility for use. A second step consists of determining procedures for acquiring data from existing sources. This step includes the specification of any interfaces with existing computerized data bases. A third step includes using the interface to acquire the data.</p> |
| <p>HOW DOES
ONE STORE
RETRIEVE
AND MAN-
IPULATE
THE
ACQUIRED
DATA?</p> | <p>b) Data management mechanisms. This sub-component consisted of the development of a computerized management information system for handling, storing, accessing, and retrieving data in as flexible a manner as possible. Included in this design was the development of computer files for storing the system as data, the development of a coding system for handling the data, the design of a backup system for the computer files, computer programs that were designed and debugged, and the design of the editing process for the computer files and their data.</p> |

WHAT ARE
THE MOST
EFFECTIVE
WAYS TO
COLLECT
EMPLOYMENT
DEMAND
DATA?

c) Documentation of the data acquisition process.

This sub-component consists of documenting the data collection procedures concerning employment demand; and includes presurvey contacts, the mailed surveys, and follow-up contacts.

A second step of this sub-component consists of documenting procedures for acquiring data from other data bases. A third step consists of evaluating return rates from the survey and making recommendations to improve the process, as well as evaluating the cost-effectiveness of acquiring data from sources other than survey.

WHAT ARE
THE
RESULTS
OF THE
STUDY?

d) Data output mechanisms. Included are definitions of numbers and types of arrays that are desired as computer outputs, the design of the SAS program for producing statistics and arrays, and the documentation for the programming so that the procedure can be replicated.

WHAT CAN
A POTENTIAL USER
OF EMPLOYMENT
DEMAND
DATA DO
WITH THE
INFORMATION?

e) Target audience specification. This component consists of determining the information needs of the various types of users of employment demand data, as well as determining the kinds of users who will be served by such a system.

The second major step of this component is designing, field testing and implementing the use of a guide which will assist data users to interpret the information on employment demand in ways that are responsive to their needs.

3.9.2 Implementation of the update system design. This component consists of conducting the specified tasks and keeping a log of activities, problems and their resolution. It is hoped that the activities of this project are well enough documented so that the next researchers who embark on a similar task will not have to rediscover the same procedures as well as their pitfalls. Therefore, activities will be documented to provide a guide to others, both to help them replicate the activities for future employment demand studies as well as to avoid some of the more challenging problems.

3.9.3 Recommendations made on the update system operation. In order to have an update system, namely a set of procedures for acquiring, managing, and reporting on employment demand, staff will analyze returns and their data, as well as data acquired from other sources, so that recommendations can be made on cost-effective procedures for using such an update system.

3.9.4 Documentation provided. Computer tapes will be made available of the base data, the data base, and the computer programs designed for managing the computer files and their contents. In addition, each of the tapes will be documented and a printout produced. A procedures manual for the update system will be developed and included as one of the Phase II deliverables.

3.10 Gain Employer Cooperation and Endorsement

A telephone interview procedure was developed for contacting trade organizations in order to: a) determine the organization's membership size; b) obtain their estimate of the total population size of their business area; c) get their endorsement of the study; and d) request a copy of their membership list.

The names of the organizations that were contacted were collected from advisory committee members, from a source book maintained by Cooperative Extension, and from a number of faculty members from the College of Agriculture and Life Sciences.

First contact with the organizations was made via an introductory letter describing the project, its objectives and intended outcomes. Support for the study was solicited at this time. Letters were sent to more than 80 trade organizations, institutions and associations. One organization secretary in particular sent a form letter developed by the project to the membership of her association, asking them to respond to the project's survey form.

3.11 Sampling and Data Collection Procedures

3.11.1 Population. The population of respondents for the study (excluding existing data sources) consisted of firms in those business areas included in the Standard Industrial Classification codes (SIC). The business areas ranged from those which have all job titles in the area classified as Agriculture/Agribusiness (e.g., dairy farming), to business areas which have only one job title requiring Agriculture/Agribusiness competencies (e.g., a bank employing an agricultural loan officer).

The business areas were conceptualized with production agriculture occupying a central position, business areas supplying goods and services (inputs) to production agriculture on the left, and the processing and distribution of production agriculture outputs on the right (see Figure 1). This paradigm was used to make research decisions concerning the selection of priority business areas, in order to establish a final population within the resources of the project budget. The first criterion applied was immediacy of relationship to production agriculture (stage). A stage is defined as a major product change (e.g., processing raw milk into cheese), or a service (e.g., farm machinery equipment repairs). For example, a retail farm machinery dealership would be a first stage business area supplying service to production agriculture, while a machinery wholesaler

would be second stage. Similarly, a milk processing plant would be stage one processing/distribution, and a supermarket selling milk from the processing plant would be second stage. Where a milk wholesaler was involved, the retailer would be stage three. Some business areas included jobs involved in both production and either processing/distribution or supplying functions. An example is a pet shop that cares for animals as well as sells them directly to consumers. A second example is a potato farm where the crop is not only grown but also packaged and sold directly to supermarkets.

In general, production agriculture involves primarily Agriculture/-Agribusiness jobs. Stage one business areas generally contain a higher percentage of Agriculture/Agribusiness jobs, and such jobs require more competence in agriculture and agribusiness. Thus, these positions are more likely to require an educational program for job entry. In selecting the business areas within which to survey respondents, priority was given to production agriculture, and stage one of the supplying, processing and distribution functions.

A second criterion applied was the availability of existing data bases. Data on much of production agriculture was already available from the Census of Agriculture data, supplemented by information from county-level Cooperative Extension staff. Maximum use of existing data bases releases resources for other areas and facilitates the update system.

The third criterion applied was the number of Agriculture/Agribusiness jobs in a business area and the frequency with which such jobs exist in all areas. For example, agricultural loan officer is the only Agriculture/Agribusiness job that exists in some of the many banks in New York State. Such an area would be accorded a low priority.

Given the above criteria, the SIC codes and business areas that make up the population for the study are listed in Appendix D.

3.11.2 Sampling. Data from existing sources represent either the total population or the sampling decisions made when the data had been collected by previous studies. Sampling decisions made in this project apply only to data collected from respondents.

Valid sampling considers the employee size of individual businesses within a business area, as well as the total number of businesses. Additionally, size of business would need to relate directly to the number of Agriculture/Agribusiness jobs. This information may, or may not, be reflected in the total number of persons employed in an individual business. Such data were not available as a basis for valid sampling. Another consideration was the large number of individual businesses involved. This large respondent size required the use of mailed surveys, a data collection mechanism that tends to result in fewer returns.

Due to the above considerations, the decision was made to use the total business population of selected SICs as the sample for the study.

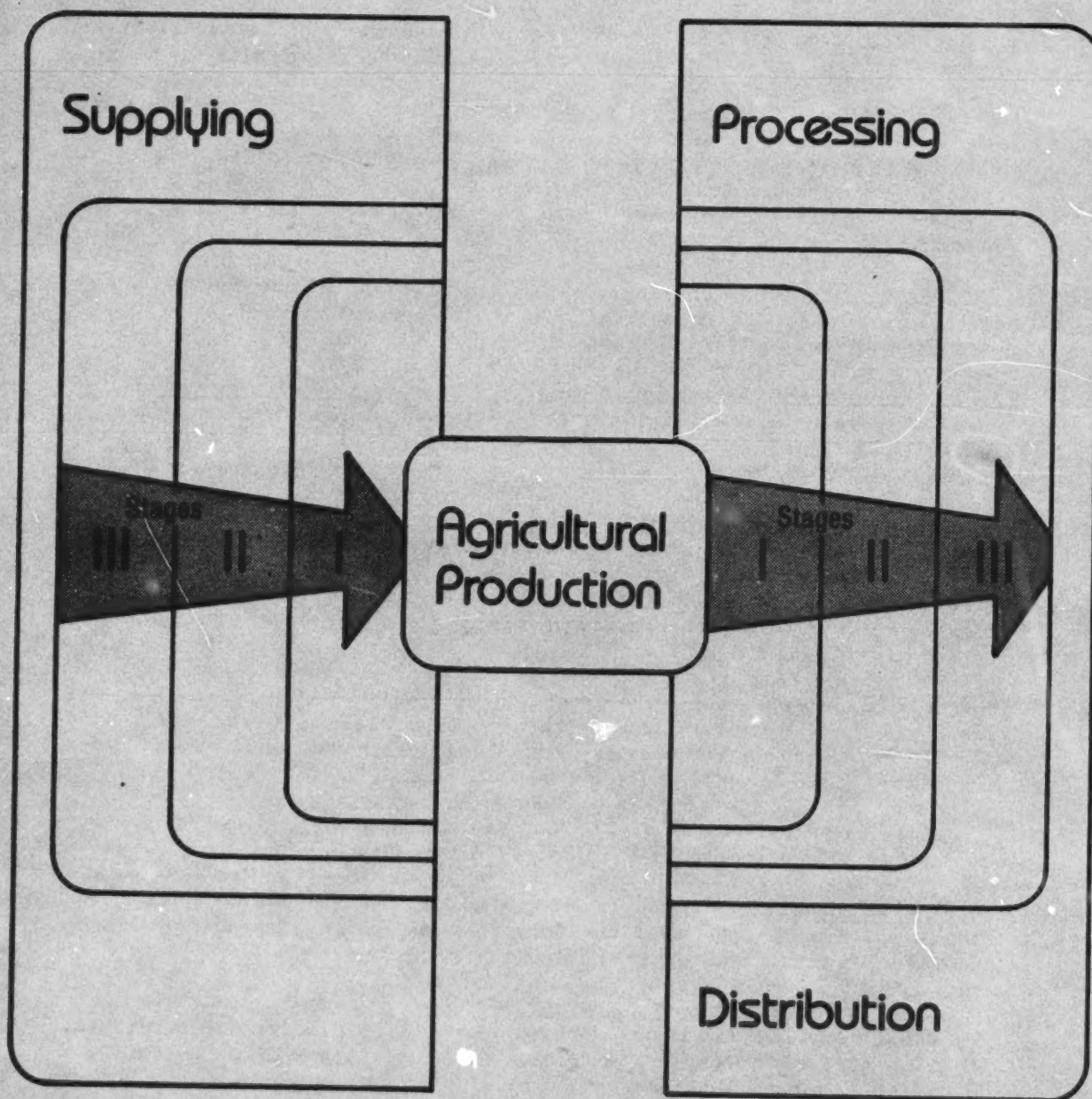


Figure 1. Relationships of Supplying, Processing and Distribution to Production Agriculture

3.11.3 Data collection procedures. Data was collected for the study through use of existing data, mailed surveys, personal interviews, and projections from businesses with common staffing patterns.

3.11.4 Existing data. The primary existing data base to be used is the 1978 U.S. Census of Agriculture which is expected to be available in Spring, 1981. Other existing data included a variety of studies by departments in the College of Agriculture and Life Sciences at Cornell University and by Cooperative Extension staff. Professional trade organizations were another data source.

3.11.5 Surveys and interviews. The use of surveys and interviews requires an accurate list of the names and addresses of individual businesses within each business area. Lists for some SIC codes were available by number of employees and by educational planning region from the Department of Commerce's unemployment insurance records. These data were made available on computer tapes. Lists for other business areas were obtained from the mailing lists of professional organizations, the Yellow Pages of telephone directories, license records from the New York State Department of Agriculture and Markets, and individual municipalities. Lists not on computer tapes were edited and entered into the project's computerized data base to allow computer generation of address labels.

Personal or telephone interviews were used for large firms and for business areas with ten or less firms.

3.11.6 Common staffing projections. Accurate listings for some business areas were found not to be available, e.g., private golf courses and pet shops. However, in many instances, the number of businesses is relatively small and common staffing patterns exist (i.e., the number of positions for Agriculture/Agribusiness jobs is common). For such businesses, the procedure for determining projections was defined. It consists of determining the number of businesses by geographic area by consulting the telephone Yellow Pages. Common staffing patterns will be determined by telephone sampling of randomly selected firms. The total number of positions is then projected by multiplying the total number of businesses by the common staffing pattern.

3.11.7 Follow-up of non-respondents. Follow-up procedures for non-respondents to surveys include use of follow-up postcards, and telephone calls to a sample of non-respondents.

Instrument development and procedures for the processing and analysis of data are described in the section that follows.

3.12 Develop Instrumentation and Procedures for Use and Analysis

A single form was developed for ease of use by busy business persons. Sixty-five different formats were developed, each containing unique lists of job titles. Each format was for a different business area (see Appendix F).

The job titles printout that resulted from previous activities was analyzed again to assure completeness. For example, were the various management levels of an enterprise represented in the list of job titles? It was discovered that "owner/operator" needed to be inserted in a large number of business areas and since the DOT did not contain an appropriate listing, staff developed unique "dummy" DOT numbers for these titles. It was also found that "supervisor/manager" titles were missing from a number of business areas. Such titles were first checked for inclusion in the DOT and if not listed, new "dummy" DOT numbers were created for them.

The forms were designed to facilitate computerized data entry. All input is numeric and up to four million keystrokes may be needed to enter all the data. The magnitude of this task was considerably underestimated in the proposal.

In Phase II of the project, SAS (a Statistical Analysis System) will be used to analyze and display the data in desired arrays. Employment demand and employment projections for job titles will be reported by educational planning regions and by Office of Education (OE) program codes.

3.13 Pretest Instruments

The survey forms were pretested in a number of different industries including zoos, lawn and garden centers, florists and food processors. One outcome of the pretesting was the finding that, in many cases, a given job title list was much too detailed and required discriminations that the respondent had difficulty in making. Therefore, the total set of job titles for all SICs was re-examined and, with consultant help, the lists were pared, refined and re-edited to a considerably fewer number.

Camera ready copy for the instruments was prepared, proofed, revised where necessary, and then printed.

3.14 Staff Training for Data Collection

Staff training for data collection focused on the two areas of data processing and external interviewing.

3.14.1 Training for data processing. Instruction for data processing was given to continuing project staff and, to a lesser extent, to persons providing data processing services (e.g., data entry into the computer). The processing of returned surveys for the management of follow-up and for data entry coding are major areas requiring instruction. Regular staff meetings and monitoring by the project director provide a continuing training process.

3.14.2 Training of external interviewers. The scope of data collection through personal and telephone interviews will necessarily require use of persons in addition to continuing project staff. The areas for instructional focus include an overview of the purpose and objectives of the study, the definitions and format of the instrument, and the research decisions involved in data processing. Instructional modes include practical interviews through role play and use of a checklist of interview procedures. Monitoring of interviewing will be done by the project director.

3.15 Data Collection

A week before the survey forms were mailed, a postcard was sent to each respondent notifying him or her that the survey would be arriving soon (see Appendix F). An SAS computer program generated heat-transfer labels for approximately 10,000 respondents from the selected U/I data supplied by the Department of Commerce.

The survey forms were later mailed to respondents from the State Education Department's mailing facilities in Albany.

An additional 6,400 forms were printed for a second mailing, to respondents whose names and addresses were obtained from trade associations, organizations, and Cooperative Extension staff.

A follow-up postcard was sent to respondents of the first mailing from whom returns had not been received.

All respondents were assigned a unique serial number by computer, and an extensive log was produced as a printout. All returned forms are logged in, coded if necessary, batched and sent to keypunching.

4.0 SUMMATIVE FINDINGS AND CONCLUSIONS

This section deals with the findings and conclusions of the implementation of Phase I of the study. The final task for this phase was the collection of data. Therefore, the findings and conclusions that follow necessarily focus on the processes used to conduct the study rather than on its products. The latter will be addressed in the Phase II final report.

The conclusions are organized around five substantive areas which were found to be significant for the project.

4.1 Project Management Issues

This area is concerned with the differences between the proposed or anticipated allocations of human and material resources, and those

considered to be more appropriate when the tasks were translated into actual work activities.

4.1.1 Staffing patterns. It soon became evident that a great variety of skills would be needed to implement the study, and that the proposed staffing pattern would not provide the needed flexibility. Therefore, several part-time, short-term employees were hired who brought special skills to the project. Additionally, some consultants were brought on for short-term activities that required their expertise. These staff persons took the place of an assistant project director, a position originally allocated in the budget.

4.1.2 Printing needs. The resources budgeted for printing such items as brochures, survey forms, advance notice postcards, and follow-up postcards were too limited. After due deliberation and consultation with persons with survey design expertise, it was decided that the more professional the appearance of the survey forms, the more likely a response would be obtained. Therefore, funds were reallocated from staffing to graphic design and printing.

4.1.3 Budget limitations. As the project staff became more aware of the potential size of the respondent universe, it became clear that there were not enough funds to cover all the possible business areas that could and should be included in the study. Department of Labor consultants recommended limiting the scope of the project since they agreed that the original intent to cover all business areas was too ambitious for the budget available. Therefore, a model was developed which described three stages, each one a level further removed from production agriculture. In general, only those business areas which could be allocated to Stage I (the one closest to agricultural production), were included in this study (see Figure 1).

4.2 Crosswalk Issues

This area is concerned with the set of problems that emerge when an effort is made to dovetail existing coding systems that deal with occupational and industrial classifications.

4.2.1 Crosswalk tapes. It would have been helpful to have computerized tapes of conversion tables. For example, the DOT to SIC conversion table was not available on magnetic tape. This required a labor-intensive effort on the part of project staff to manually assign SIC codes to 9-digit DOT job titles by first assigning each job title the appropriate 3-digit DOT industrial codes, and then looking up the appropriate SIC codes in the conversion table.

4.2.2 OES matrix. A major disappointment to project staff was to discover that no OES matrix had yet been developed for agriculture. It was anticipated that this study's data could be 'plugged into' the OES matrix to develop projections. This would have been a cost-effective procedure. However, the Department of Labor anticipates developing the agricultural component within the next several years.

4.2.3 Census codes. The census occupational and industrial codes are of limited value in the collection and use of employment demand data. The classification scheme used is too general for applicability at the occupational program planning level. Due to limitations of the existing census coding systems, SOC (Standard Occupational Classification) codes should be used as soon as practicable.

4.3 Job Titles and Business Areas

This area covers the issues that emerged as project staff tackled the major task of locating appropriate job titles for Agriculture/Agribusiness.

4.3.1 DOT fourth edition limitations. A number of job titles were identified that were not listed in the DOT or its update, because the title was new or too general. However, our preliminary efforts indicated that the title was likely to be used in the field. Therefore, a "dummy" DOT number (compatible with the DOT classification system) was assigned to such titles. Should the survey data indicate the viability of a "dummy" title, it should be included in the DOT.

A second coding problem emerged when it was found that the alternate titles listed in the DOT under the 9-digit job title code are of two kinds. In some instances, DOT alternate titles are simply another name for the base title. Other alternate titles are specialized titles which also occur in other business areas. This resulted in the necessity of using both base and alternate titles (with the same DOT nine-digit code) for the collection of valid employment data.

4.3.2 Small business vs. large business. It was found that small firms and large firms in the same business area use job titles differently. The small firms tend to use more general titles, since one person may perform a number of highly varied job tasks. This may create problems when program planners try to apply the findings of the study. Some effort will have to be made to 'cluster' job titles as part of program planning.

Another issue that emerged with regard to size of business was its effect on sampling. It was intended to develop a stratified sample based on employer size (number of employees). However, it was discovered that this particular stratification would be of limited value for two reasons: 1) Not all jobs in a given business are agricultural and there was no cost-effective way to determine agricultural employee size prior to the survey. 2) For a large number of business areas, no information was available prior to the survey on the size of the business.

4.3.3 SIC limitations. A number of Agriculture/Agribusiness 'business areas' are grouped together with non-Agriculture/Agribusiness 'business areas' under a single SIC code. For example, SIC code 7699 which covers "Retail Farm Machinery Dealerships" is titled "Repair Shops and Related Services, Not Elsewhere Classified." This category includes Bowling Pins, Refinishing and Repair; Key Duplicating Shops; Awning Repair Shops; and the like. Therefore, use of the unemployment insurance tapes as a data base is limited.

4.3.4 U/I tape limitations. The Department of Commerce U/I tapes are not updated with sufficient regularity to edit out such cases as firms which have changed business areas, or firms that were incorrectly assigned to a business area. This limits the reliability of the tapes as a source of respondents.

A further limitation is that the U/I tapes do not include "Mom & Pop" enterprises. Such enterprises hire no workers; only family labor is used. It would be desirable to include family labor in the survey.

4.4 Data Management

The data elements to be managed for the project (3,000 x 5 for the base data; 15,000 x 20 for the survey log; and an estimated 7,000 x 85 for the respondent data) required a computerized management information system of a size not anticipated in the original proposal. For example, it takes a megabyte of core to sort job titles by SIC codes, since a given job title may be found in anywhere from one to ten different SICs. Development and use of this system was more costly than the amount budgeted.

4.5 Respondent Differences

Respondents tended to interpret information differently for a variety of reasons, each of which will impact on the analysis of the data.

4.5.1 Full-time, part-time. Since the definitions of 'full-time' and 'part-time' were highly variable, the survey instrument left the definition to the respondent. Data, therefore, will need to be interpreted in the context of this variability.

4.5.2 The need for Agriculture/Agribusiness educational programs. Some respondents perceived themselves as part of the medical profession and took umbrage at the suggestion that they belonged to Agriculture/Agribusiness. They, therefore, felt that nobody in their establishment needed an Agriculture/Agribusiness program. This was a fairly consist response from veterinarians, for example. Some persons thought the question asked whether there should be additional training programs provided, and responded "NO" to their interpretation of the question. These variations will have to be taken into account when analyzing responses.

5.0 IMPLICATIONS FOR FUTURING

The results of this employment demand study are potentially usable in a number of ways by the futuring committees of the State Education Department. Certainly, these data will have immediate applicability for the Committee on Agricultural Education. Further, the ways in which the data are used can perhaps be developed into a utility paradigm for other vocational education areas. Such a paradigm could be an initial step in a futuring model.

One of the outcomes of this study is the collection of a comprehensive listing of job titles used in Agriculture/Agribusiness. No such listing could be located anywhere in the literature, or in any archive. There is now available, for career orientation for example, a large collection of possible jobs in this field.

Direct implications for futuring are:

5.1 Program Priority Setting

The data will indicate which occupations have a high demand rate. This, in turn, can serve as a basis for establishing program priorities. For example, the data base developed by the study can provide a complex of high demand jobs. These can be used to determine common tasks, and can further be used to conduct cluster analyses for curriculum development.

5.2 The Data Management System

The computerized system developed for managing the employment demand data can provide a regenerative strategy for the expedient updating of curricular priorities.

In addition, the survey results will supply the most complete and current data base yet developed.

5.3 Curriculum Development and a Broad Data Base

Futuring (i.e., the comprehensive review and redesign of occupational curricula) will require an analytical (function/task analysis) procedure. The employment demand study in Agriculture/Agribusiness can provide the broad data base for such an analytical approach in curriculum development.

Curricular priorities are becoming increasingly important as student numbers decrease. The current employment situation is a vital factor in establishing priority among curricula.

5.4 Futuring and the Need for Employment Demand Data

There is an urgent need to establish procedures for building curricula based on employment data in order to: a) identify priority competencies, b) cluster the competencies and c) develop instructional modules.

6.0 DISSEMINATION AND DIFFUSION

The progress and activities of the study have been regularly reported to interested groups by means of various seminars, conference presentations, and written activity reports. These include the eight presentations listed in Appendix I.

6.1 Dissemination of Final Report

This Phase I Final Report covers the progress and results of the study from its inception through the task of collecting data. As a part of the execution of these tasks there exists a computer file of over 2700 Agriculture/Agribusiness job titles coded by: (a) DOT nine-digit job code; (b) the status of the title as base alternate, or dummy number title; (c) occurrence or absence in New York State; (d) DOT three-digit industrial code; (e) four-digit SIC codes; and (f) business areas within SIC codes that apply to a given job title.

The basic product intended to be produced by the study--a user guide of material related to using Agriculture/Agribusiness employment demand data--will be available at the conclusion of Phase II.

6.2 Network Linkage

This report will be submitted to the ERIC Clearinghouse on Adult and Vocational Education at the Ohio State University, through the State Education Department. If it is accepted it will be available on microfiche to interested users. In addition, we expect to be able to make available at cost any computer tapes of the system and its data base.

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APPENDIX A

NEW YORK STATE ADVISORY COMMITTEE

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APPENDIX B

TASK FORCE FOR THE AGRICULTURE/AGRIBUSINESS EMPLOYMENT DEMAND STUDY

The task force consists of representation from the New York State Cooperative Extension Staff, the High School Teachers of Agriculture, the six Agricultural and Technical Colleges, and Trade and Professional Organizations in the Agriculture/Agribusiness Industry such as:

<u>Name</u>	<u>Affiliation</u>
Richard Amidon	Empire State Potato Club, Inc.
Herbert Barber	National Grape Coop. Assn., Inc., and NYS Wine Grape Growers Assn.
Donald M. Bay	Upstate Milk Cooperatives, Inc.
Glenn Brown, Jr.	North Eastern Dairy Corp.
Charles Cameron	Delhi Agricultural and Technical College
David Chamberlain	Canton Agricultural and Technical College
Michael Doyle	Finger Lakes Wine Growers Association
J. Lewis DuMond	NY Forest Owners Assn., Inc.
Margaret Dunbar	NYS Jersey Assn.
Silas Eakins	Dairylea Cooperative, Inc.
Donald S. Earl Inc.	NYS Poultry Industry Coordinated Effort,
George Gabrielse	NY Swine Improvement Coop. Assn., Inc.
Robert Good	NY Beef Cattlemen's Assn.
Murray Hammerman	North Atlantic Milk Processors, Assoc.
Sandra Haynes	NY Ayershire Assn.
Margaret Herbst	NYS Nurseryman's Assoc.
Isidore Jablons	NY Florists Club
Donald Jones	Morrisville Agricultural and Technical College
Marjorie Koszlyk	NY Milking Shorthorn Breeders Assn.
Thomas Leamer	Alfred Agricultural and Technical College
Barbara Luchsinger	NYS Jersey Cattle Club
Robert Macecki	NY Arborist's Assn.
Howard McDonald	Eastern Milk Producers Coop. Assn., Inc.
Allen Ostrander	American Dairy Assoc. & Dairy Council of NY, Inc.
William Paladino	NY & New England Apple Institute

L. A. Putnam

Harry A. Randy, Jr.

Richard Redmond

Ann Reilly

George Rich

Richard Robson

Douglas Sinclair

Robert Stockbridge

Ann Trowbridge

Frank Turek

John B. Webb

Frank Wiley

David Wilmot

Robert Wingert

John Wistrand

International Apple Institute

NYS Brown Swiss Cattle Breeders Assn.

Dairies Cooperative, Inc.

NYS Flower Industries, Inc., and
Long Island Flower Growers Assn.

NY Purebred Dairy Cattle Assn.

NYS Seed Association

Western NY Apple Growers Assn, Inc., and
NY Cherry Growers Assn., Inc.

Farmingdale Agricultural and Technical
College

NYS Angus Assoc.

NYS Vegetable Growers Assoc.

NY Christmas Tree Growers Assn., Inc.

Upstate Milk Cooperatives, Inc.

NYS Poultry Industry Coordinated Effort,
Inc.

Cobleskill Agricultural and Technical
College

NYS Turfgrass Assn.

APPENDIX C

DICTIONARY OF OCCUPATIONAL TITLES (DOT) INDUSTRY DESIGNATIONS CHECKED FOR JOB TITLES RELATED TO AGRICULTURE/AGRIBUSINESS

Codes

116 Agriculture & Agricultural Service
121 Agricultural Equipment Industry
133 Amusement & Recreation
138 Any Industry
141 Feather, Plume & Artificial &
Preserved Flower & Plant Industry
154 Automotive Services
164 Bakery Products Industry
169 Basket & Rattan & Willowware Ind.
176 Boot & Shoe Industry
184 Brush & Broom Industry
187 Business Services
214 Canning & Preserving Industry
234 Cereal Preparations Industry
237 Chemical Industry
249 Clerical & Kindred Occupations
271 Construction Industry
279 Cordage & Twine Industry
283 Corn Products Industry
313 Dairy Products Industry
317 Distilled Liquors Industry
319 Domestic Service
335 Education & Instruction
375 Financial Institutions

Codes

377 Firearms & Guns Industry
381 Fishery Industry
385 Food Preparations & Food
Specialties Industry,
N.E.C.
387 Forestry Industry
391 Forging
397 Fur Dressing Industry
399 Fur Goods Industry
421 Glue & Gelatin Industry
425 Governmental Services
427 Grain & Feed Milling Industry
431 Grease & Tallow Industry
453 Hotel & Restaurant Industry
457 Hunting & Trapping
518 Leather Manufacturing Industry
532 Light, Heat, & Power Industry
537 Lime Industry
544 Logging Industry
554 Macaroni & Related Products
Industry
567 Malt Liquors Industry
569 Match Industry
573 Medical Services
589 Motion Picture Industry

Codes

593 Motor Vehicle Transportation Ind.
597 Museums, Art Galleries, & Botanical
& Zoological Gardens
634 Nonprofit Membership, Charitable,
& Religious Organizations
639 Nut Processing & Shelling Industry
646 Animal & Vegetable Oils & Fats
(N.E.C.) Industry

Codes

661 Paper & Pulp Industry
674 Personal Service
705 Professional & Kindred
Occupations
741 Retail Trade Industry
817 Sawmill Industry
948 Wholesale Trade Industry

APPENDIX D

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES AND BUSINESS AREAS DEFINED AS AGRICULTURE/AGRIBUSINESS IN NEW YORK STATE

<u>SIC #</u>	<u>AREA #</u>	<u>TITLE</u>
0111		Wheat Farms
0115		Corn Farms
0116		Soybean Farms
0119		Cash Grain Farms
0134		Irish Potatoes
0161		Vegetables and Melons
0171		Berry Crops
0172		Grapes
0175		Deciduous Tree Fruits
0181		Ornamental Horticulture and Nursery Production
	01811	Greenhouse Production
	01812	Nursery Production
	01813	Christmas Tree Farms
0182		Food Crops Grown Under Cover
	01821	Mushrooms
		Vegetables (Hot House Crops)
0191		General Farms, Crop
0211		Beef Cattle Feed Lots
0212		Beef Cattle Except Feed Lots
0213		Hog Farms
0214		Sheep and Goat Farms
0241		Dairy Farms

<u>SIC #</u>	<u>AREA #</u>	<u>TITLE</u>
0251		Broiler, Fryer and Roaster Chicken Farms
0252		Chicken Egg Farms
0253		Turkey and Turkey Egg Farms
0254		Poultry Hatcheries
0259		Poultry and Eggs Not Elsewhere Classified
	02591	Duck Farms
	02592	Game Farms
0272		Horses and Other Equines
0279		Animal Specialties Not Elsewhere Classified
	*02791	Dog Farms (Breeders)
	02792	Cat Farms
	02793	Bee Farms (Apiary/honey production)
	02794	Fish Farms
	*02795	Earthworm Farms
	02796	Laboratory Animal Farm (Breeder)
0291		General Farm, Livestock
0711		Soil Preparation Services
0721		Crop Planting, Cultivation and Protection
0722		Crop Harvesting, primarily by Machine
0723		Crop Preparation Services for Marketing
0741		Veterinary Services, Livestock
0742		Veterinary Services for Animal Specialties
0751		Livestock Services Except Animal Specialities
	07511	Artificial Inseminators
	07512	Milk Testing

* Deleted From Study

<u>SIC</u>	<u>AREA #</u>	<u>TITLE</u>
	07514	Sheep Shearing
0752		Animal Speciality Services
	07521	Boarding Kennels
		Pleasure and Show Horses
	*07523	Breeding Animals Other Than Livestock
	07524	Dog Grooming
	*07525	Pedigree Record Services
	07526	Pet Training
0761		Farm Labor Contractors
0762		Farm Management Services
0781		Landscape Counseling & Planning
0782		Lawn and Garden Services
	07821	Landscape Maintenance Services
	07822	Landscape Contractors
	07823	Lawn Services
0783		Ornamental Shrub and Tree Services
	07831	Arborist Services
	07832	Landscape Contractors
	07833	Shrub and Tree Spraying
0811		Timber Tracts
	08111	Tree Farms
0821		Forest Nurseries
0851		Forest Services
0912		Fin Fish (vessel)
0913		Shell Fish
0919		Miscellaneous Marine Products
0971		Hunting, Trapping and Game Propagation
	09711	Hunting Clubs
	09712	Trapping
	09713	Wildlife Management

<u>SIC #</u>	<u>AREA #</u>	<u>TITLE</u>
2011		Meat Packing Plants
2016		Poultry Dressing Plants
2021		Creamery Butter
2022		Cheese, Natural and Processed
2023		Condensed and Evaporated Milk
2024		Ice Cream and Frozen Desserts
2026		Fluid Milk
2082		Malt Beverage (Breweries)
*2083		Malt
2084		Wineries
2085		Distilleries
2411		Logging Camps and Logging Contractors
2421		Saw Mills and Planing Mills
2426		Hardwood Dimension and Flooring Mills
2429		Special Products Sawmills
2431		Millwork, Veneer, Plywood and Structural Wood Members
	24311	Millwork
	24312	Veneer
	24313	Plywood
	24314	Structural Wood Members
2435		Hardwood Veneer and Plywood Mills
2436		Softwood Veneer and Plywood Mills
2611		Pulp Mills
2621		Paper Mills Except Building Paper
2631		Paper Board Mills
2711		Newspapers, Publishing

<u>SIC #</u>	<u>AREA #</u>	<u>TITLE</u>
2721		Periodicals, Publishing
2731		Books, Publishing
2873		Nitrogenous Fertilizer (Manufacturing)
2875		Fertiliser, Mixing Only
3523		Farm Machinery and Equipment Manufacturing
3524		Garden Tractors, Lawn and Garden Equipment Manufacturers
	35241	Garden Tractors (Manufacturing)
	35242	Lawn and Garden Equipment (Manufacturing)
4212		Local Trucking Without Storage (Milk)
	42121	Milk Haulers
4931		Electric and Other Services (Tree Trimming) Technician
4939		Combination Utilities, Not Elsewhere Classified (Tree Trimming)
5083		Wholesale Farm and Garden Machinery and Equipment
5143		Wholesale Dairy Products
5144		Wholesale Poultry and Poultry Products
5147		Wholesale Meat and Meat Products
5148		Wholesale Fresh Fruits and Vegetables
5153		Wholesale Grain
5154		Wholesale Livestock (Auction Markets)

<u>SIC #</u>	<u>AREA #</u>	<u>TITLE</u>
5159		Wholesale Farm Products or Materials Not Elsewhere Classified
	51591	Chicks
	*51592	Dealers in Raw Farm Produce
	51593	Horses, Wholesale
	*51594	Raw Skins
	51595	Raw Wool
5191		Wholesale Farm Supplies
5199		Wholesale Non-Durable Goods Not Elsewhere Classified
5261		Retail Nurseries, Farm and Garden Stores
	52611	Nurseries, Retail
	52612	Lawn and Garden Supplies
5422		Retail Freezers and Food Lockers
5423		Retail Meat and Fish Markets
5431		Fruit Stores and Vegetable Markets
5992		Retail Florist
5999		Miscellaneous Retail Stores Not Elsewhere Classified
	59991	Pet Shops (Retail)
6131		Agricultural Credit Institutions
6331		Fire, Marine and Casualty Insurance
7342		Exterminating Services
7391		Commercial Research and Development Laboratories,
	73911	Agricultural Research Laboratories
	73912	Chemical Laboratories
	73913	Food Research Laboratories
	73914	Agricultural Research and Development

<u>SIC #</u>	<u>AREA #</u>	<u>TITLE</u>
7393		Detective and Protective Services
7397		Commercial Testing Laboratories
7699		Repair Shops and Related Services Not Elsewhere Classified
	76991	Farm Machinery
7948		Racing
	79481	Flat Racing, Including Track Operations
	79482	Breeding and Training of Thoroughbreds
	79483	Harness Racing, Including Track Operations
	79484	Breeding and Training of Standardbreds
7992		Public Golf Courses
7997		Membership Sports and Recreation Clubs
	79971	Private Golf Courses
7999		Amusement and Recreational Services
	79991	Public Parks
	*79992	Zoos, Commercial
	*79993	Fish and Game Clubs
	*79994	Dude Ranches
	79995	Agricultural Fairs
	*79996	Horse Shows
	79998	Riding Academies
8421		Arboreta, Zoological and Botanical Gardens, Public
	84211	Arboreta and Botanical Gardens
	84212	Zoological Gardens (Zoos)
8699		Membership Organizations Not Elsewhere Classified
	86991	Humane Societies
8911		Engineering Services
	89111	Surveyors

<u>SIC #</u>	<u>AREA #</u>	<u>TITLE</u>
8999	89991	Services, Not Elsewhere Classified Entomologists
9512		Conservation Agencies
9641		Regulation of Agricultural Marketing and Commodities
	96411	Agricultural Extension Service
	96412	Department of Agriculture and Markets
	96413	USDA
9721		International Affairs
	97211	Peace Corps
	97212	State Department (Federal)

* Deleted From Study

APPENDIX E

LIST OF JOB TITLES USED ON SURVEY INSTRUMENTS BY STANDARD INDUSTRIAL CLASSIFICATION/BUSINESS CODES

01811 Ornamental Floriculture & Nursery Products: Greenhouse Production (Wholesale)

40599901031	Owner/Operator	18016704231	Greenhouse Manager
40636101001	Plant Propagator	40868401401	Pesticide Applicator
40599904031	Salesperson	40568701401	Laborer

01812 Ornamental Floriculture & Nursery Products: Nursery Production (Wholesale)

40599901031	Owner/Operator	18016704201	Supervisor/Manager
40599902031	Foreman	40868401401	Pesticide Applicator
40599903031	Equipment Operator	40599904031	Salesperson
40568701401	Laborer		

02592 Game Farms

04099906032	Avian Specialist	41213101012	Game Farm Supervisor
41213701012	Head Animal Keeper	41216101012	Game Bird Farmer
41268401012	Game Farm Helper		

02790 Animal Specialties, W.E.C.

40199901032	Owner/Operator	41016101012	Animal Breeder
41016101002	Animal Farmer	41067401012	Animal Caretaker
41316101012	Beekeeper		

07110 Soil Preparation Services

45999901031	Owner/Operator	45099990231	Supervisor/Manager
45999903031	Equipment Operator	40868401401	Pesticide Applicator
45968701011	Brush Clearing Laborer		

07210 Crop Planting, Cultivating & Protection Services

40999901031	Owner/Operator	04099912031	Crop Specialist
40999902031	Supervisor/Manager	40999903031	Foreman
40868401401	Pesticide Applicator	40968301011	Equipment Operator
42168301011	Laborer		

07220 Crop Harvesting Services

40911701011	Harvest Contractor	40913101011	Picking Crew Supervisor
40968301011	Farm Machine Operator	42168301011	General Farm Worker

07230 Crop Preparation Services

52999901031	Owner/Operator	52999902031	Supervisor
52999903031	Foreman	52968718611	Sorter and Grader
42168301011	General Farm Worker		

07410 Veterinary Services for Livestock

07310101011	Veterinarian	07399901031	Veterinarian Assistant
07336101011	Veterinary Laboratory Technician	04536701011	Animal Hospital Clerk

07420 Veterinary Services for Animal Specialties

07310101011	Veterinarian	07399901031	Veterinarian Assistant
07336101011	Veterinary Laboratory Technician	24536701011	Animal Hospital Clerk

07514 Sheep Shearing

40199901033	Owner/Operator	41013401413	Wool Shearing Supervisor
41068401413	Sheep Shearer	41068701013	Fleece Tier
41068702613	Wool Fleece Sorter		

07520 Animal Specialty Services

41099901033	Owner/Operator	41099903033	Manager
41899902033	Animal Trainer	41099902033	Animal Handler
41867401013	Dog Groomer	41067401002	Animal Attendant
41899910033	Kennel Worker	41999901033	Cage Washer
41899906033	Dog Walker		

07610 Farm Labor Services

40911701001	Farm Labor Contractor	01816705001	Farm Crew Leader
40999901031	Laborer		

07620 Farm Management Services

09699901031	Owner/Operator	04099902031	Farm Management Specialist
09699902031	Farm Consultant	40999901031	Laborer

07810 Landscape Counseling and Planning

18216701411	Landscape Contractor	00106101811	Landscape Architect
40816101001	Laborer		

07820 Lawn & Garden Services

40899901031	Owner/Operator	40868401401	Pesticide Applicator
40868701411	Landscape Laborer		

**07830 Shrub & Tree Services:
Arborist Services/Landscape Contracting/Shrub & Tree Spraying**

40899900931	Arboriculturist	18216701411	Landscape Contractor
40818101011	Tree Surgeon	40813101011	Shrub & Tree Spraying Sup.
40868401401	Pesticide Applicator	40866201011	Hydro Sprayer Operator
40868401811	Tree Pruner	40868701411	Landscape Laborer

08510 Forestry Services

18099910331	Forest Manager	04006103411	Forester
45938701001	Timber Cruiser	45548701011	Log Scaler
45268701001	Forest Worker		

20110 Meat Packing Plants

52599909232	Manager	52513101412	Cutting and Boning Sup.
52538101412	All-Round Butcher	52568405412	Meat Trimmer
52538101012	Butcher Apprentice		

20160 Poultry Dressing Plants

52599903031	Supervisor	52568707011	Poultry Dresser
52599902031	Laborer		

20210 Creamery Butter

52999901032	Plant Manager	04006102212	Dairy Technologist
52913101412	Butter Processing Sup.	52913701402	Dairy Sanitation Sup.
02936101402	Butter Tester	52999903032	Butter Grader
52936201012	Buttermaker	52938201012	Continuous Churn Buttermaker
52999908032	Creamery Person	22248501012	Tank Truck Milk Receiver
92068507802	Packaging Machine Oprtr.	52968602602	Buttermaker Helper

20220 Cheese, Natural and Processed

52999901032	Plant Manager	04006102212	Dairy Technologist
52913101412	Cheese Processing Sup.	52913701402	Dairy Sanitation Sup.
02936101402	Cheese Lab. Tester	52938701002	Cheese Grader
52048701012	Cheese Blender	52936101812	Cheese Maker
52958501012	Cheese Cutter	22248501012	Tank Truck Milk Receiver
92068507802	Packaging Machine Operator	52968602602	Cheese Maker Helper

20230 Condensed and Evaporated Milk

52999901032	Plant Manager	04006102212	Dairy Technologist
52913101412	Dairy Processing Sup.	52913701402	Dairy Sanitation Sup.
02936101402	Milk Laboratory Tester	52138201012	Evaporator Operator
52368511412	Sterilizer Operator	52368510612	Instantizer Operator
52168522212	Milk Powder Grinder	22248501012	Tank Truck Milk Receiver
92068507802	Packaging Machine Oprtr.	52968602612	Dairy Helper

20240 Ice Cream and Freezer Desserts

52999901032	Plant Manager	04006102212	Dairy Technologist
52913101412	Dairy Processing Sup.	52913701412	Dairy Sanitation Sup.
02936101402	Ice Cream Lab. Tester	52948201012	Freezer Operator
52968513012	Flavor Room Worker	52468601412	Novelty Worker
52368501012	Batch Freezer	22248501012	Tank Truck Milk Rec.
52968602612	Dairy Helper		

20260 Fluid Milk

52999901032	Plant Manager	04006102212	Dairy Technologist
52913101412	Dairy Processing Sup.	52913701402	Dairy Sanitation Sup.
52913101402	Pasteurizing Sup.	02936101402	Milk Lab. Tester
52999915032	Milk Pasteurizer	52938201812	Dairy Proc. Equip. Op.
22248501012	Tank Truck Milk Rec.	90548301002	Milk Hauler
52968602602	Pasteurizer Helper		

20840 Wineries

18316101412	Winemaker	52913101012	Cellar Supervisor
52968502612	Bottled Beverage Inspector	52168509412	Crushing Machine Oprtr.
52168505812	Clarifier	52268502612	Wine Fermenter
52368512612	Wine Pasteurizer	52168513012	Filter Press Tender
52168519012	Ion Exchange Operator	52168537012	Winery Worker
92068718212	Sterilizer Operator		

24110 Logging Camps and Logging Contractors

18316703802	Logging Contractor	45913301012	Logging Supervisor
04006103412	Forester	45468401812	All-Round Logger
45499918032	Lumber Agent	16299904031	Log Buyer
45499916032	Log Haul Worker		

24210 Sawmills and Planing Mills

66766201002	Sawmill Operator	16299904032	Log Buyer
66768601402	Sawmill Worker		

24260 Hardwood Dimension and Flooring Mills

66766201002	Sawmill Operator	16299904032	Log Buyer
66768601402	Sawmill Worker		

24310 Millwork

24350 Hardwood Veneer and Plywood

24360 Softwood Veneer and Plywood

66766201001	Sawmill Operator	16299904032	Log Buyer
66768601402	Sawmill Worker		

26210 Paper Mills, Except Building Paper Mills

26310 Paperboard Mills

66766201002	Sawmill Operator	16299904032	Log Buyer
66768601402	Sawmill Worker		

35230 Farm Machinery and Equipment

01306101811	Agricultural Equipment Design Engineer	01315101011	Agricultural Equipment Sales Engineer
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35240 Garden Tractor & Lawn and Garden Equipment

01306101811 Agricultural Equipment
Design Engineer

01315101011 Agricultural Equipment
Sales Engineer

42121 Milk Haulers

90913701012 Driver Supervisor
91968701402 Truck Washer

90548301002 Milk Hauler

49310 Electric & Other Services Combined

40813701411 Tree Trimming Sup.
40866701011 Tree Trimmer Helper

40866401001 Tree Trimmer

**50830 Farm & Garden Machinery and
Equipment (Wholesale)**

01315101011 Agricultural Equipment
Sales Engineer

27235701411 Farm & Garden Equipment
Sales Rep

51430 Dairy Products (Wholesale)

16211702611 Field Contact Technician

16299901031 Salesperson

51440 Poultry & Poultry Products (Wholesale)

16299903031 Egg Buyer
26099904031 Egg Salesperson

16299907031 Poultry Buyer
26099904131 Poultry Salesperson

51470 Meat & Meat Products (Wholesale)

31668401801 Meat Inspector
26099905031 Salesperson

31668401811 Meat Cutter

51480 Fresh Fruits & Vegetables (Wholesale)

26099911031 Fruit Broker
26099912031 Fruit & Vegetable
Market Worker

52913704611 Grading Supervisor

51530 Grain (Wholesale)

16215701011	Grain Broker & Market Op.	16216701011	Grain Buyer
27235701011	Animal Feed Products Sales Rep		

51540 Livestock (Wholesale)

16399908031	Livestock Market Operator	16399904031	Livestock Broker
16215702611	Livestock Commission Agent	41067401811	Livestock Yard Attndt.

51591 Chicks (Wholesale)

18516707013	Wholesaler	41113701013	Poultry Hatchery Sup.
26025701013	Livestock Sales Rep.	41136401013	Fowl Blood Tester
22248701413	Order Filler	41168701013	Chick Grader
41168401413	Poultry Vaccinator	41168701413	Chick Sexer
41168702203	Incubator Helper	41168702613	Poultry Debeaker

51593 Horses (Wholesale)

18516707013	Wholesaler	16215702612	Livestock Com. Agent
26025701013	Livestock Sales Rep.	41013401013	Livestock Yard Sup.
41067401813	Livestock Yard Attndt.		

51910 Farm Supplies (Wholesale)

18099908031	Farm Supplies Manager	27235701411	Farm Supply Sales Rep
27235701011	Animal Feed Products Sales Representative		

**52610 Retail Nurseries, Lawn & Garden
Supply Stores**

40599901231	Owner/Operator	18016704201	Manager
27235702201	Salesperson	40868401401	Pesticide Applicator
18216701411	Landscaper	40868701411	Landscape Laborer
40568701401	Laborer		

54220 Freezer and Locker Meat Provisioners

31699909232	Owner/Manager	31668401802	Meat Inspector
31668401812	Meat Cutter	31668401802	Meat Salesperson

59920 Florists

14299901031	Owner/Operator	14208101001	Floral Designer
14299902031	Salesperson		

61310 Agricultural Credit Institutions

18699901031	Manager	18699904031	Agricultural Loan Officer
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63310 Fire, Marine & Casualty Insurance

25099902031	Farm Insurance Fieldperson
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73420 Disinfecting and Exterminating Services

25199909232	Owner/Operator	38968401012	Exterminator
25135701812	Pest Control Service Sales Agent		

73910 Research and Development Laboratories

04006101002	Crop Researcher	04099912032	Crop Specialist
05006701012	Agricultural Economist	04108101002	Food Scientist
04026158012	Soil Conservation Technician		

73970 Commercial Testing Laboratories

02299906032	Food Chemist
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76991 Retail Farm Machinery Dealership

18599907132	Farm Equip. & Sup. Dealer	18516703812	Parts Manager
18516702612	Equip. Rental and	62999906032	Farm and Industrial
	Leasing Manager		Equipment Mechanic
62428101012	Farm Equipment Mechanic	27935706212	Parts Salesperson
27235701412	Farm and Garden Equipment		
	and Supplies Sales Rep		

79482 Breeding and Training of Thoroughbreds

41099901031	Owner	18099901031	Farm Manager
41013101001	Horse Foreman	41922401011	Trainer
07310101001	Veterinarian in Residence	07399901031	Veterinarian Assistant
41067402201	Groom	40668401401	Maintenance Employee
41099902031	Horse Manager (Stud, Mare, Foals and Weanlings)		

79483 Harness Racing, Including Track Operation

15399901031	Owner	41922401011	Trainer
41999902031	Assistant Trainer	15324401411	Driver
41013101001	Stable Manager	07310101001	Track Veterinarian
07399901031	Veterinarian Assistant	07399902031	Drug Detection Technician
41838101001	Blacksmith	41067402201	Groom
40668401401	Grounds Maintenance Person		

79484 Breeding and Training of Standardbreds

41099901031	Owner	18099901031	Farm Manager
41922401011	Trainer	07310101001	Vet. in Residence
07399901031	Veterinarian Assistant	41067402201	Horse Caretaker
40668401401	Maintenance Employee	41099902031	Horse Mangr. (Stud, Mare, Foals and Weanlings)

79920 Public Golf Courses

18999902031	Golf Course Manager	40613701411	Greens Superintendent
40868401401	Pesticide Applicator	40668301011	Greenskeeper
40668301001	Golf Course Laborer		

79970 Membership Sports and Recreation Clubs

40699906032	Golf Course Superintendent	40699905032	Greens Worker
40668301012	Golf Course Laborer		

79990 Amusement and Recreation Services, N.E.C.

18799901032	Agricultural Fair Manager	35316101012	Hunting and Fishing Guide
18799903032	Horse Show Manager	18716710212	Fish and Game Club Man.
18799902032	Fishing Lakes Operations Manager		

84211 Arboreta & Botanical Gardens

40699910031	Director	40613401411	Supervisor
40868401401	Pesticide Applicator	40668701011	Groundskeeper

84212 Zoological Gardens

41299901031	Director	41213701011	Curator
41299903031	Assistant Curator	41267301001	Animal Caretaker

86990 Animal Humane Studies

37967301002 Dog Warden

95120 Land, Mineral, Wildlife & Forest Conservation

02908101001	Environmental Scientist	04006105411	Soil Conservationist
04006105811	Soil Scientist	04199912031	Wildlife Specialist
04006103411	Forester	40868401401	Pesticide

APPENDIX F

**SAMPLE SURVEY INSTRUMENT AND OTHER DATA
COLLECTION MATERIALS**



New York State College of Agriculture and Life Sciences
a Statutory College of the State University
Cornell University

Department of Education
Stone Hall
Ithaca, N. Y. 14853

Cornell Institute for
Occupational Education
Telephone 607-255-8025

Dear Employer:

Your firm is part of agriculture/agribusiness, the largest single industry in New York State. The future of this industry depends upon a competent workforce.

In order to meet your need for workers, the State Education Department* has to have valid information on the current and projected number of jobs in each business area of the industry. This information will be used for planning educational programs to prepare workers for jobs in agriculture/agribusiness.

Your help is essential to provide this planning information. You are, therefore, urged to fill out this postage prepaid survey and mail it back to us within the next seven days.

Your data will be held in the strictest confidence. Project reports will show only statewide and regional totals by job title. Further, there will be no way to identify your firm in any project report and your data will not be made available to any other agency for any purpose.

Should you need additional information about this survey or assistance in completing this form, please call Gloria Cooper at (607) 255-8025.

Thank you in advance for helping to make possible cost-effective program planning to prepare competent and motivated workers for agriculture/agribusiness.

Sincerely yours,

Gloria S. Cooper
Project Director
Employment Demand Study

Arthur L. Berkey, Professor
Agricultural and Occupational
Education

**NOTE: LIMIT RESPONSES TO AGRICULTURE/AGRIBUSINESS JOBS LOCATED IN
NEW YORK STATE.**

*The New York State Education Department and the New York State College of Agriculture and Life Sciences at Cornell University jointly funded the Cornell Institute for Occupational Education to conduct an 18-month study of employment demand in agriculture and agribusiness in New York State.

A Survey of Employment Demand for Agriculture and Agribusiness in New York State

Name of Person Filling Out Form _____

Position or Title _____

Telephone Number (____) _____

For Office Use

Instructions:

Please read the instructions below before completing this survey. Instruction numbers correspond to section numbers on the survey. If you have any questions, please call Gloria Cooper at (807) 258-9025 collect.

1. Business Area:

Check the name of the business area printed on the survey. If it is incorrect, cross it out and write in the correct business area for your firm. If you are engaged in additional business area(s) that involve agriculture/agribusiness jobs (e.g., Nursery plus Landscaping), write in the additional area(s).

2. Job Titles:

Only agricultural and agribusiness job titles used in your business area are listed. You may have other jobs in your firm which do not require agricultural skills. Please do not list such job titles.

INCLUDE

(a) agriculture/agribusiness positions held by persons receiving salaries or hourly wages, (b) owner-operators, (c) unpaid family workers over age 16.

EXCLUDE

(a) agriculture/agribusiness positions using contractual or custom services where the workers are not on your payroll, (b) any job titles not requiring agricultural skills.

The agriculture/agribusiness titles in the list are taken from the Dictionary of Occupational Titles and may differ slightly from commonly used job titles. Special instructions for non-typical cases follow.

IF THEN

- | | |
|---|---|
| Titles for wrong business area are listed. | ⇒ Cross out titles and substitute correct ones. |
| A title listed is not a job in your firm. | ⇒ Check the box following the title. |
| You use another name for the listed title. | ⇒ Please use the listed title. |
| You have agriculture/agribusiness title(s) not listed. | ⇒ Write the additional job title(s) in the blank space(s). |
| One person performs tasks associated with several job titles. | ⇒ Select and report on the ONE title where the person spends the most working time. |

3. Positions, Full-time and Part-time:

Please supply the information requested in the survey on the number of positions for 1990 and 1992. Use your firm's definition of full-time and part-time.

Employment for more than 180 days in one year is considered year-round. Seasonal refers to a position for which people are hired for 180 days or less during the same time periods each year. Note that part-time does not mean seasonal. Seasonal workers may be either full-time or part-time.

For "Total numbers of positions" in 1990, report both filled and unfilled positions. For seasonal positions, report the total positions in all seasons (e.g., 3 in Spring and 2 in Fall is reported as 5 positions).

For "Number of openings" in 1990, report the same full-time position filled more than once in the same year as one opening. Count seasonal openings in the same way as seasonal positions.

For 1992, report the number of positions expected in 1992. Assume no major changes in the economy.

4. Agricultural Training Program:

For each job listed, please indicate whether at least a ten-month agricultural training program is needed prior to employment. Examples of training programs include Horticulture, Agribusiness (Sales & Service), Conservation, Mechanics, and Animal and Crop Production.

1. Business Area:	Please check / if you do not have job title.	3. Positions, Full-time and Part-time:							4. Should there be an Agricultural Training Program for this job?	
2. Job Titles:			Full-time		Part-time		No. of unpaid family labor	Yes	No	
			Year Round	Seasonal	Year Round	Seasonal				
		1990	Total number of positions							
			Total number of openings							
		1992	Expected number of positions							
			Total number of openings							
		1990	Total number of positions							
			Total number of openings							
		1992	Expected number of positions							
			Total number of openings							
		1990	Total number of positions							
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		1990	Total number of positions							
			Total number of openings							
		1992	Expected number of positions							
			Total number of openings							

Advance Notice of a Survey Important to You

WHAT Within the next two weeks you will receive a brief, important survey from the Cornell Institute for Occupational Education. It will ask about the types of jobs in your business area that require agricultural or agribusiness skills.

WHY Employers need trained workers for agriculture and agribusiness jobs. If programs to provide this training are to prepare workers for businesses such as yours, your help is essential.

HOW Please complete the survey when it arrives and return it using the prepaid mailer provided.



The survey is sponsored by the College of Agriculture and Life Sciences at Cornell University and by the New York State Education Department through the Cornell Institute for Occupational Education.